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⑳ Applicant: BRUTE LIMITED  
Unit 1, Hayes Lane Industrial Estate Folkes  
Road  
Lye West Midlands DY9 8RN(GB)

㉑ Inventor: Young, Ronald Alexander  
4 Anderson Street  
London SW3(GB)

㉒ Representative: Jones-Robinson, Stanley  
The Laurels 320 London Road Charlton  
Kings  
Cheltenham Gloucestershire GL52 6YJ(GB)

### ㉓ Cleaning devices.

㉔ A cleaning device comprises a body or holder 1 providing a backing 4 for a disposable sheet 5 of a surface wiping material, for example of paper. The backing 4 incorporates a moisture absorbent material to act as a reservoir for liquid and which in use maintains the disposable sheet 5 in a constantly moistened condition. The material of the sheet 5 has the property that as the outer contact surface thereof is "swept" or "wiped" over a surface to be cleaned a substantially even flow of liquid from the reservoir material of the backing 4 to the outer contact surface of the sheet 5 provides a "moisturised wipe" condition at the surface being swept or wiped.

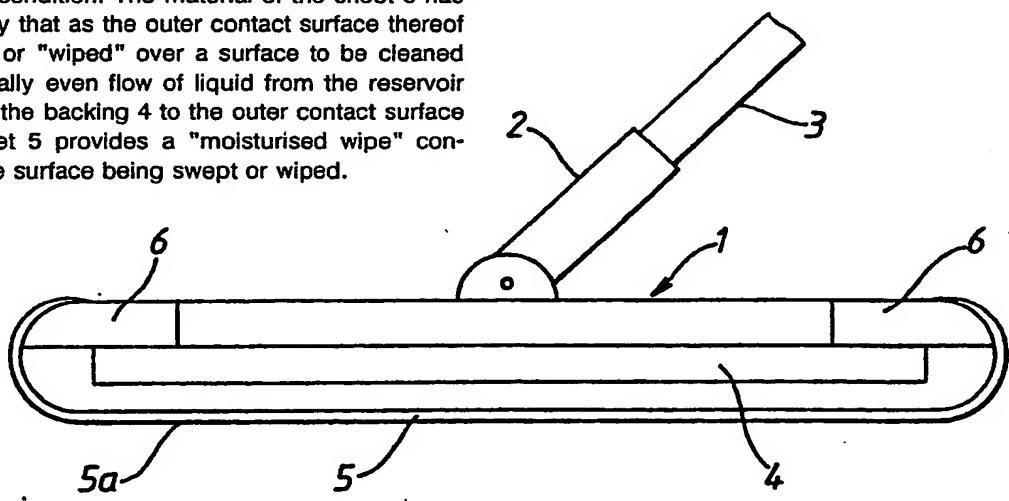


Fig. 1.

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## CLEANING DEVICES

The invention relates to cleaning devices, and in particular to devices which provide in use damp cleaning of a surface.

Paper "wipes" are commonly used to clean surfaces as paper or a similar material can wipe clean a surface without leaving smears. Disposable sweeping systems are also known in which a piece of material such as paper torn or cut off a roll is attached to a broom-like or similar style holder and is used to collect dust and grit from floors. When it is dirty the piece of material is detached and thrown away, and replaced by a fresh piece.

The invention has for its object to obtain the advantages of such use of paper and like material in a much more efficient manner, particularly so far as cleaning of the surface being wiped or swept is concerned.

The invention provides a cleaning device which comprises a body or holder providing or supporting a backing for a disposable sheet of a material, for example of paper, which backing incorporates a moisture absorbent material to act as a reservoir for liquid and which in use maintains the disposable sheet in a constantly moistened condition, the material of said sheet having the property that as the outer contact surface thereof is "swept" or "wiped" over a surface to be cleaned a substantially even flow of liquid from the reservoir material to the contact surface provides a "moisturised wipe" condition at the surface being swept or wiped.

Thus the disposable sheet of the invention has a damp surface which causes dirt and dust to adhere to the sheet more efficiently, and it removes smears from surfaces such as walls and windows more effectively, than with the present use of paper wipes or disposable sheet material.

Preferably the holder of the device is hand held in use, and it may have a handle mounting to fit either a short handle for smear-free wiping of window surfaces, for example, or a long handle for use in floor sweeping. In either case the backing for the disposable "moisturised wipe" sheet is conveniently of elongate shape with end clips by which the disposable sheet is secured in position on the holder. It may be a mop pad holder such as is conventionally used in a wet or damp mopping system, with the mop pad providing the reservoir material retaining the liquid by which the attached sheet is constantly moistened. Thus the same holder could be used for damp or wet mopping, the moisturised wipe sheet then being attached for smear-free wiping of the mopped surface. The same end clips may be usable to secure the mop pad and/or the moisturised wipe sheet. Alternative-

ly a mop pad holder may be used but, for use in moistured wiping, the holder being fitted with a pad of cotton or cellular sponge, for example, to provide the backing reservoir material.

5 An essential feature of the disposable moistured wipe material is that it should in use remain constantly damp without allowing a free flow of the liquid from the reservoir material, thus having a "blotting" action so far as flow to the surface to be cleaned is concerned. It must have a texture allowing moisture to flow from the outer surface which is doing the sweeping or wiping and it should retain sufficient tensile strength so that, when wetted, it does not tear apart in use.

10 15 The moistured wipe material may be of laminated form with an outer side layer chosen largely for its moisture flow and surface cleaning properties, and an inner side layer chosen largely for its tensile strength when wet. Thus the outer layer can have properties such that it can "glide" over the surface being cleaned with minimum drag when damp, and a porosity which provides control of the moisture flow to the outer surface so that the latter remains evenly damp to have a blotting rather than a wetting action on the surface being cleaned.

20 25 30 A damp or moistured wipe device in accordance with the invention will now be described with reference to the accompanying diagrammatic drawings. In the drawings:

35 Fig. 1 is a longitudinal side view of the device; and

40 Fig. 2 illustrates the laminated form of a disposable sheet of moistured wipe material used in the device.

45 The drawings illustrate a hand-held device with an elongate body 1 attached, via a universally-jointed handle mounting 2, to a handle 3 of the desired length. The body 1 supports a cotton or sponge pad-like backing 4 for a sheet 5 of laminated moisture wipe material. The sheet 5 is disposable and easily replaced when soiled, being wrapped tightly over the backing 4 and retained, at the ends of the body 1, by end clips 6.

The sheet 1 is fitted after the backing 4 material has been saturated with a liquid, in respect of which it then acts as a reservoir from which the liquid is constantly and evenly supplied to the sheet 5 as the latter is swept or wiped over a surface, such as that of a window or a floor to be cleaned. This the sheet 5 does with a "damp wiping" or "damp sweeping" action, the material of the sheet 5 allowing what is in effect a controlled flow of the liquid such that the outer contact surface of the sheet 5 remains damp rather than wet; in other words, so that it provides a moistured

wipe rather than having a mopping action.

The liquid with which the backing 4 is saturated may be plain water, for example, or it may be a cleaning liquid such as a detergent solution depending on the degree of cleaning action required. The body 1 is preferably a collapsible mop pad holder, as used to hold a mop pad for damp or wet mopping of a surface. Thus, with the sheet 5 and backing pad 4 detached a normal mop pad can be fitted so that the same device has a dual function - after mopping of a surface the same device can be used for moisturised wiping thereof. In some cases, it will be found that the sheet 5 can be wrapped around the actual mop pad after liquid-saturation thereof, so that the mop pad provides the reservoir backing for the sheet 5.

As shown in Fig. 2 the sheet 5 is of laminated form, comprising an inner layer 7 and an outer layer 8. Each of these layers may be of paper or paper-like material, or of any other porous material suitably providing the desired characteristics for the moisturised wipe of the invention. Both layers 7 and 8 must allow moisture to flow through the sheet 5 from the reservoir backing 4 to the outer sheet surface 5a, as indicated by the arrows 9. The formation of the inner layer 7 is such as to provide the necessary tensile strength for the sheet 5, when wet, so that it does not tear apart when wiped over the surface being cleaned.

The outer layer 8, providing the outer wiping or sweeping surface 5a, has a structure principally chosen so that it will "glide" over the surface being swept or wiped with a minimum of drag when wet. Either, or both, of the layers 7 and 8 has a porous structure such that the desired controlled liquid flow to the outer surface 5a is achieved, and the surface remains satisfactorily and evenly damp without becoming unduly wet. In particular, it does not become dripping wet if lifted off the surface being swept or wiped.

## Claims

1. A cleaning device comprising a body or holder (1) providing or supporting a backing (4) for a disposable sheet of a material, for example of paper, which backing (4) incorporates a moisture absorbent material to act as a reservoir for liquid and which in use maintains the disposable sheet (5) in a constantly moistened condition, the material of said sheet (5) having the property that as the outer contact surface (5a) thereof is "swept" or "wiped" over a surface to be cleaned a substantially even flow of liquid from the reservoir material to the contact surface (5a) provides a "moisturised wipe" condition at the surface being swept or wiped.

2. A device according to claim 1, wherein said body or holder (1) is adapted to be hand held in use.

3. A device according to claim 2, wherein said body or holder (1) has a handle mounting (2) adapted to fit either a short handle (3), suitable for smear-free wiping of window surfaces, or a long handle suitable for use in floor sweeping.

4. A device according to any one of the preceding claims, wherein said backing (4) is of elongate shape with end clips (6) provided by which said disposable sheet (5) is secured in position on the body or holder (1).

5. A device according to any one of the preceding claims, wherein said body or holder (1) is a mop pad holder such as is conventionally used in a wet or damp mopping system, with the mop pad providing the reservoir material retaining the liquid by which the attached sheet (5) is constantly moistened.

6. A device according to claim 4 and claim 5, wherein the same end clips (6) are usable to secure the mop pad and/or the moisturised wipe sheet (5).

7. A device according to any one of the preceding claims, wherein said body or holder (1) is a mop pad holder which, for use in moisturised wiping, is fitted with a backing pad (4) which provides the reservoir material in place of a mop pad.

8. A device according to claim 7, wherein the backing pad (4) is a pad of cotton or cellular sponge material.

9. A device according to any one of the preceding claims, wherein the moisturised wipe material (5) is of laminated form with an outer side layer (8) chosen largely for its moisture flow and surface cleaning properties, and an inner side layer (7) chosen largely for its tensile strength when wet.

10. A device according to claim 9, wherein said outer side layer (8) has properties such that it can "glide" over the surface being cleaned with minimum drag when damp, and a porosity which provides control of the moisture flow to the outer surface (5a) so that the latter remains evenly damp to have a blotting rather than a wetting action on the surface being cleaned.

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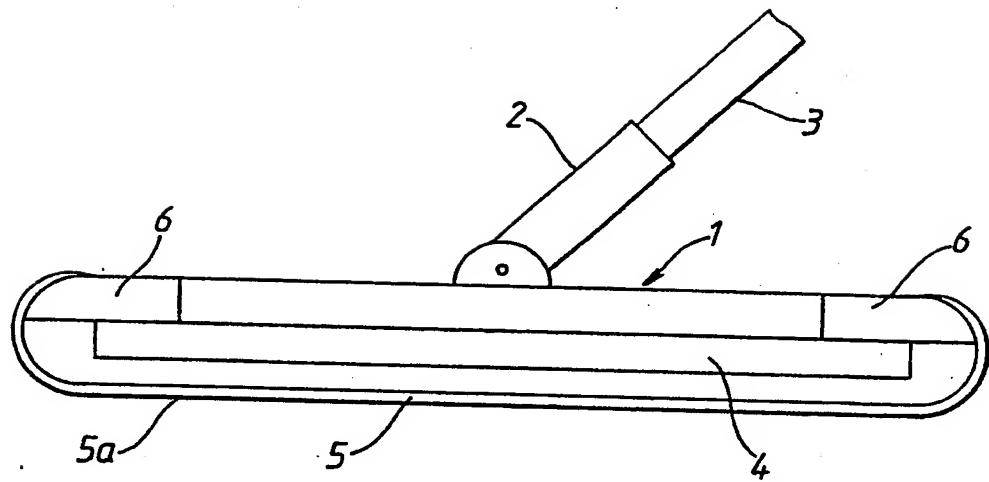


Fig. 1.

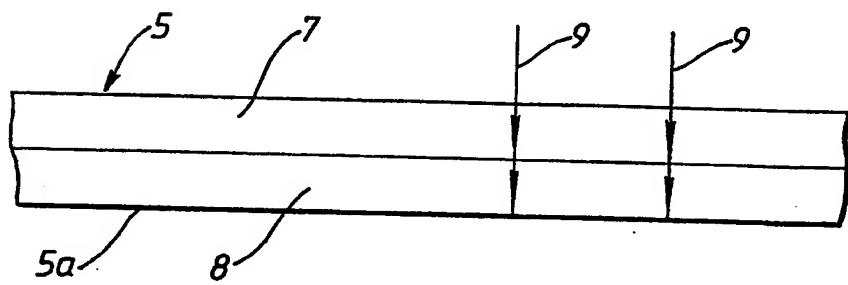


Fig. 2.



EP 89 31 1867

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	US-A-4 106 153 (J.H. LEMELSON) * Whole document * ---	1-3,5,7 -9	A 47 L 13/16 A 47 L 13/26
X	NL-A-8 601 378 (DUROL) * Page 4, lines 13-25 * ---	1-3,5,8	
A	FR-A-1 147 277 (WABI SA) * Whole document * ---	9,10	
A	EP-A-0 222 955 (SPONTEX SA) * Whole document * ---	9,10	
A	EP-A-0 265 684 (MELITTA) * Whole document * ---	9,10	
A	GB-A- 510 675 (O. MUCKENHIRN) -----		
TECHNICAL FIELDS SEARCHED (Int. Cl.5)			
A 47 L			
The present search report has been drawn up for all claims			
Place of search	Date of completion of the search		Examiner
THE HAGUE	27-02-1990		VANMOL M.A.J.G.
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ..... & : member of the same patent family, corresponding document	
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